REMARKS/ARGUMENTS

The claims are 2-10. Claim 1 has been canceled in favor of new claim 10 to improve its form. Accordingly, claims 2-9 have been amended to refer to new claim 10. In addition, the specification has been amended to insert headings in accordance with U.S. practice. Reconsideration of the claims is expressly requested.

Claims 1, 2 and 5-9 were rejected under 35 U.S.C. § 102(a) as being anticipated by *German Patent DE 197 46 329 to Phan*. Claims 3 and 4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Phan*. Essentially, the Examiner's position was that *Phan* discloses the method and display apparatus recited in the claims except for the number of pixels recited in claims 3 and 4, which were considered within the skill of the art.

This rejection is respectfully traversed.

First, Applicant would like to explain the invention of claim 10 according to a conceptual example shown in Fig. A and Fig. B of the attached color illustration. In short, the present invention provides a method for appropriately grouping the data in a bitmap image data plane and associating the grouped data with the pixel lamps in a display screen, and an apparatus carrying out this method.

Fig. A shows an example of a dot-matrix type display screen in which 25 pixel lamps (the 'R's, 'G's, and 'B's) in three colors (red, green, and blue) are evenly arrayed in a regular pattern and in which these three kinds of pixel lamps are evenly dispersed.

Fig. B shows an example of image data to be displayed on the display screen. 25 pixel data are shown in Fig. B, and one pixel is expressed by a gathering of first color data, second color data, and third color data (the 'R' data, 'G' data, and 'B' data).

Fig. B-1, Fig. B-2, and Fig. B-3 show examples of first, second, and third color data planes. These data planes are virtual data planes that respectively consist of the first color data, the second color data, and the third color data taken out from the multi-color bitmap image data plane. In the examples shown, 25 pieces of red data form the first color data plane (the red data plane), 25 pieces of green data form the second color data plane (the green data plane), and 25 pieces of blue data form the third color data plane (the blue data plane).

Each data plane is divided into a multitude of groups. Fig. B-1 shows one group (red data group) surrounded by the red square and made of four pieces of red data (R#8, R#9, R#13, and R#14); Fig. B-2 shows one group (green data group 1) surrounded by the

green square and made of four pieces of green data (G#9, G#10, G#14, and G#15), and another group (green data group 2) surrounded by the green square and made of four pieces of green data (G#13, G#14, G#18, and G#19); and Fig. B-3 shows one group (blue data group) surrounded by the blue square and made of four pieces of blue data (B#14, B#15, B#19, and B#20).

Each group is made to correspond to one pixel lamp in the display screen. In the example shown, the red data group is made to correspond to red lamp R1 in Fig. A, the green data group 1 is made to correspond to green lamp G1, the green data group 2 is made to correspond to green lamp G2, and the blue data group is made to correspond to blue lamp B1.

Now, turning to the multi-color bitmap image data plane shown in Fig. B, it can be seen that <u>the positions of the red data group, the green data group 1, the green data group 2, and the blue data group are mutually shifted but partially overlap one another</u>, and the positions thereof interrelate with (i.e., correspond to) the positions of the red lamp R1, the green lamp G1, the green lamp G2, and the blue lamp B1 on the display screen of Fig. A. This feature is recited in the final paragraph of claim 10. In other words, in the present invention, each of the neighboring lamps (for example, red lamp R1, green lamp G1, and blue lamp B1) are <u>not</u> supplied with red data, green data, and blue data that belong to a single data group (for example, a data

group made of pixel #8, #9, #13, and #14). Instead, the neighboring lamps R1, G1, and B1 are supplied with red data, green data, and blue data that each belong to a different data group (for example, red data of the red data group made of R#8, R#9, R#13, and R#14; green data of the green data group 1 made of G#9, G#10, G#14, and G#15; and blue data of the blue data group made of B#14, B#15, B#19, and B#20). In short, in the present invention, the **data** in the bitmap image data plane are grouped so that their positions are <u>mutually shifted in a manner partially overlapping one another.</u>

By correlating the data in the bitmap and the lamps in the display screen in the way as described above, it becomes possible to display precise, high-quality images on the display screen.

Please note that the example explained in these remarks and in the attached color illustration is for illustrative purpose only and should not be taken to limit the scope of the present invention.

Fig. C in the attached color illustration shows a display screen configured according to the *Phan* patent. Please note that Fig. C is substantially the same as Fig. 2(a) of *Phan*.

In the display screen of *Phan* shown in Fig. C, there are 25 lamps in the three colors, R, G, and B. The lamps are grouped

into "dynamic pixels 18" (surrounded by the circles in Fig. C) in a manner that they are mutually shifted in position and partially overlap one another.

The significant differences between *Phan* and the present invention is that, in *Phan*, the **lamps** are grouped so that the dynamic pixels 18 are mutually shifted in position and partially overlap one another, and **not the data** in the bitmap image data plane as in the present invention. *Phan* does not disclose, nor suggest, how the bitmap data to be supplied to the display is arranged, nor how the bitmap data and the pixel lamps are correlated with each other.

Specifically, *Phan* does **not** disclose:

the feature recited in paragraph (a)(2) of claim 10, since it does <u>not</u> have any disclosure of image data to be supplied to the display screen.

the features recited in paragraphs (b) through (g) of claim 10, since it does <u>not</u> disclose:

dividing the first, second, and third color data planes into a plurality of data groups,

making each data group correspond to each of the lamps in the display screen, or

activating each lamp according to a selected piece of data contained in each data group; and

the feature recited in the last paragraph of claim 10, since *Phan* does <u>not</u> disclose a structure in which the positions of the data group of the first, second, and third colors are mutually shifted but partially overlap one another, and in which the positions thereof interrelate with (i.e., correspond to) the positions of the lamps of the first, second, and third colors on the display screen.

Because *Phan* fails to disclose the above-mentioned features of claim 10, the invention according to present claim 10 could not have been anticipated by or obvious over *Phan*. Further, because none of the other reference cited by the Examiner discloses the above-mentioned features, a person skilled in the art would not have been able to arrive to the invention as recited in claim 10. As claims 2-9 are dependent on claim 10, it is believed that they are patentable over *Phan* for the same reasons.
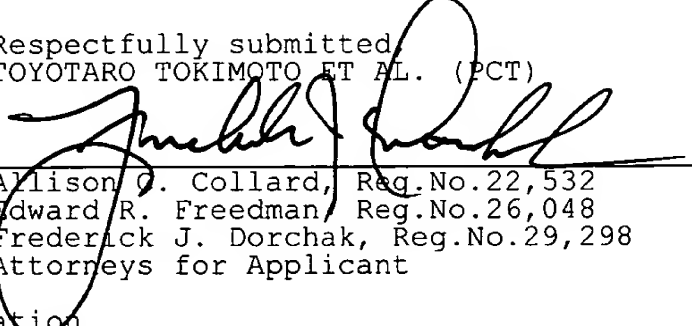
Applicant would also like to advise the Examiner that the counterpart Japanese application was granted and is now Japanese

patent No. 3396215. A copy of the patent publication is attached hereto. Although *Phan* was cited also in course of examination of the counterpart Japanese application, the Japanese Examiner approved that the present application was neither anticipated by nor obvious over *Phan*.

In summary, claim 1 has been canceled, claims 2-9 have been amended, and new claim 10 has been added. The specification has also been amended. In view of the foregoing, it is respectfully requested that the claims be allowed and that this case be passed to issue.
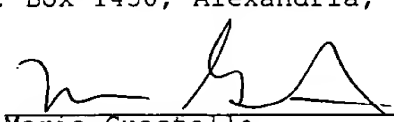
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Enclosure: Color illustration
            Japanese Patent No. 3396215

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